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(54) **PLAYBACK UPDATES**

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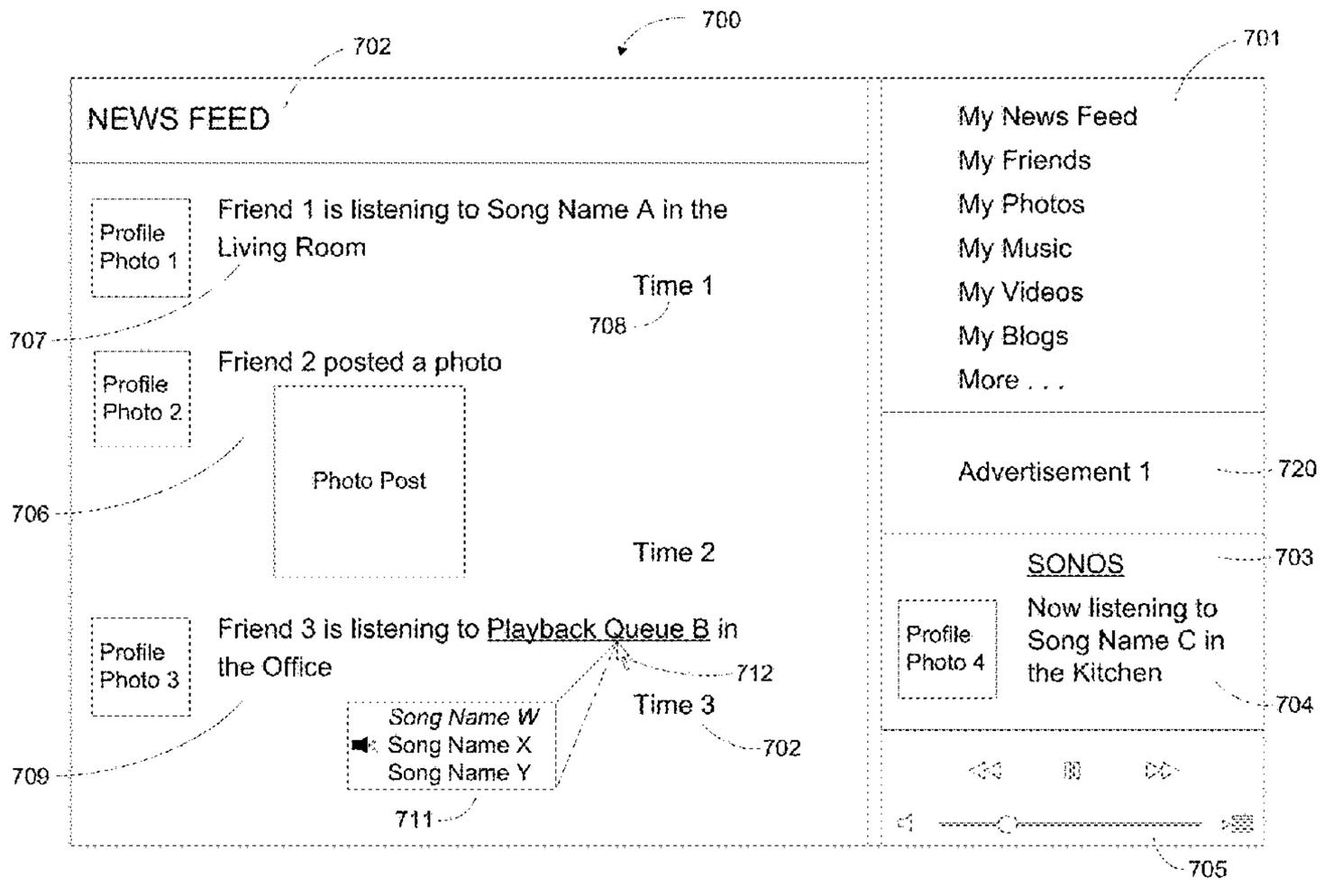
(57) **ABSTRACT**

Embodiments are described herein that involve receiving, by a social-media computing system from a media playback system, playback data indicating media that is being played back by the media playback system, where the playback data comprises an indication of at least one zone of the media playback system in which the media is being played back; and based on the received playback data, updating social-media data in a social-media account, where the updated social-media data comprises an indication of the at least one zone in which the media is currently being played back.

20 Claims, 8 Drawing Sheets



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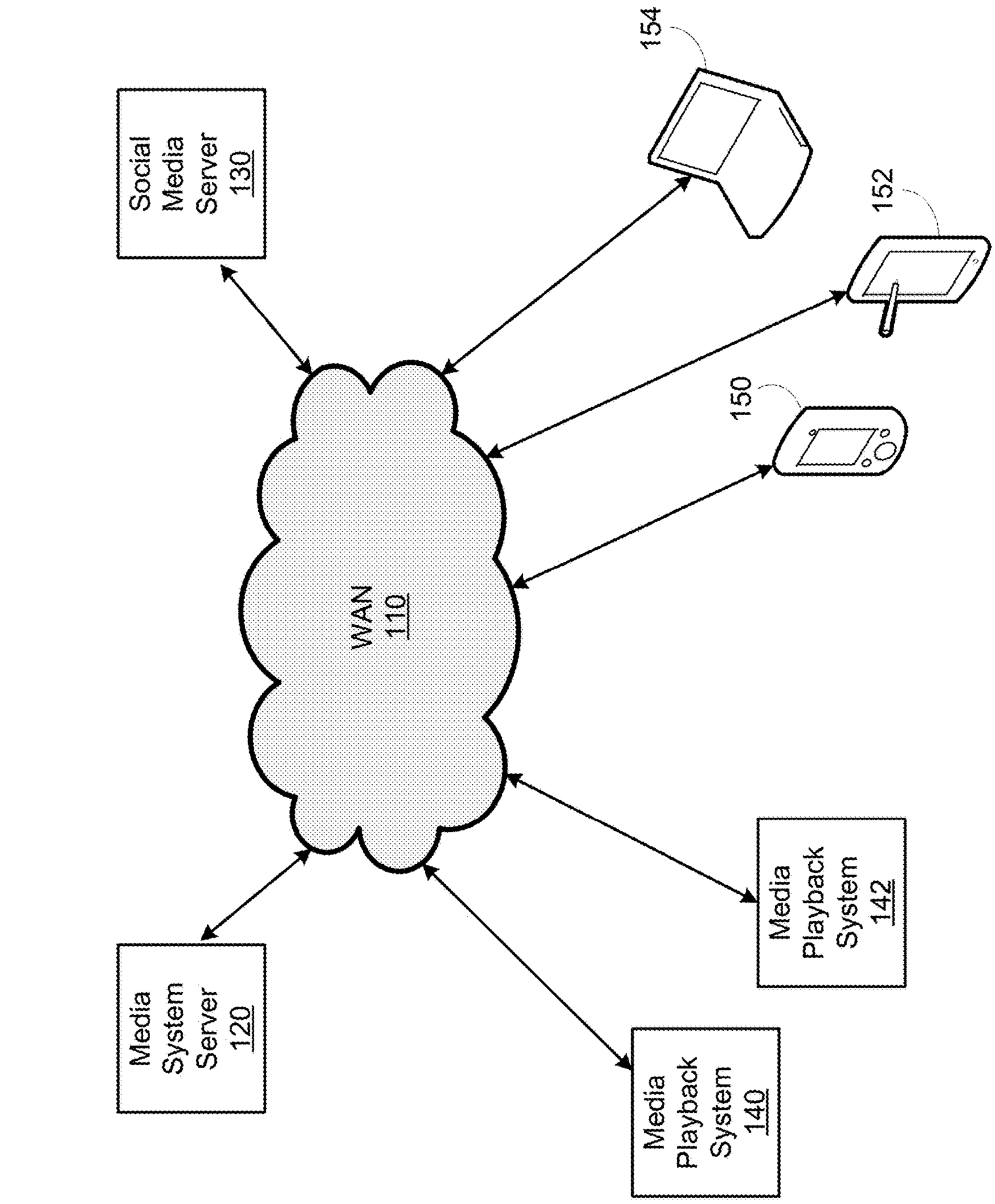
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154
152
150
WAN 110
Media System Server 120
Media Playback System 142
Media Playback System 140
100

FIGURE 1

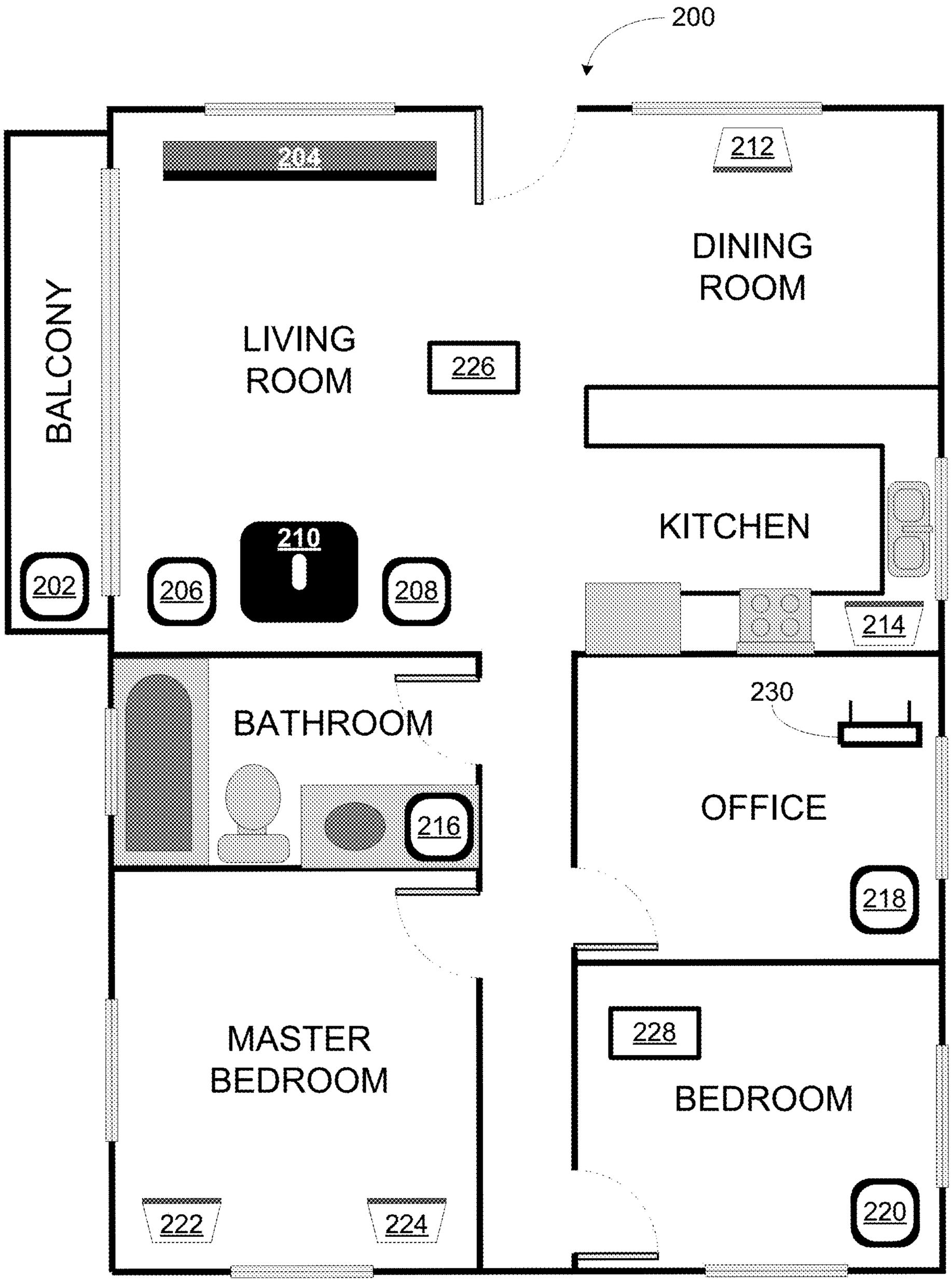
200
204
212
DINING ROOM
LIVING ROOM
226
BALCONY
KITCHEN
210
202
206
208
214
230
BATHROOM
216
OFFICE
218
MASTER BEDROOM
228
BEDROOM
222
224
220

FIGURE 2

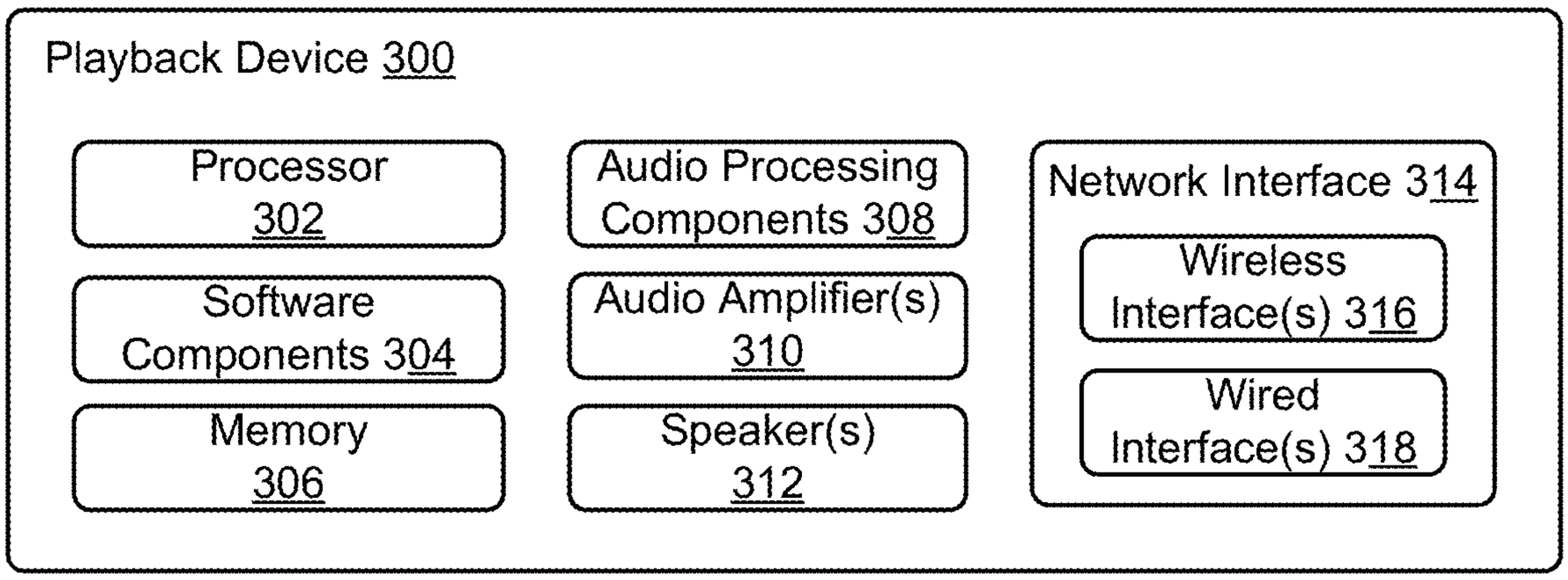

FIGURE 3

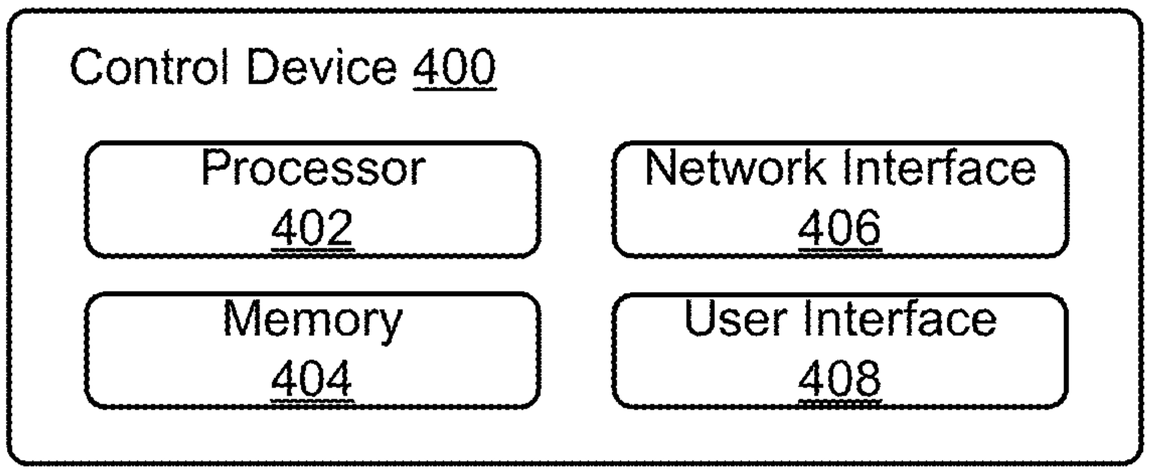

FIGURE 4

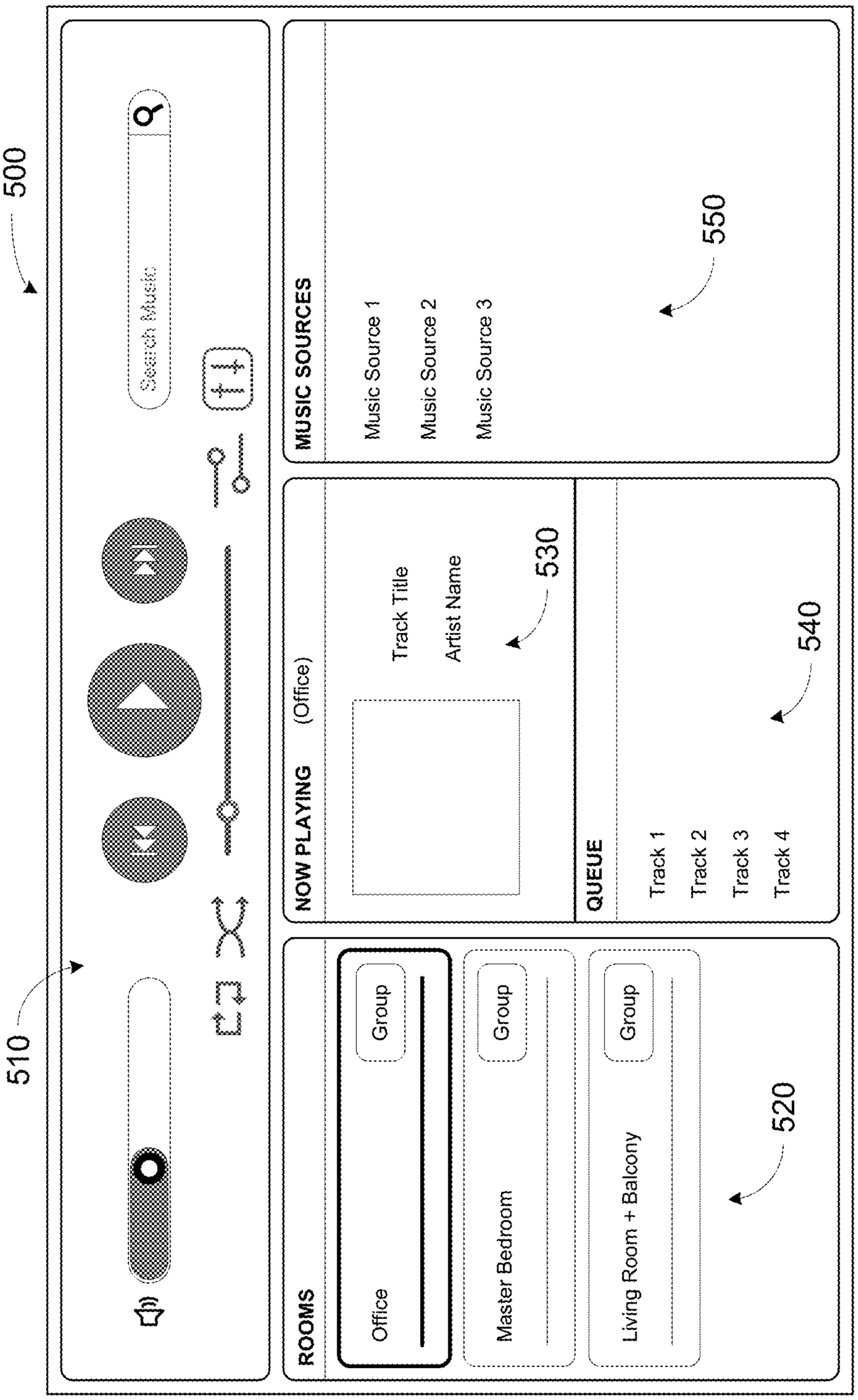
500
Search Music
NOW PLAYING (Office)
Track Title
Artist Name
530
QUEUE
Track 1
Track 2
Track 3
Track 4
540
MUSIC SOURCES
Music Source 1
Music Source 2
Music Source 3
550
510
ROOMS
Office
Group
Master Bedroom
Group
Living Room + Balcony
Group
520

FIGURE 5

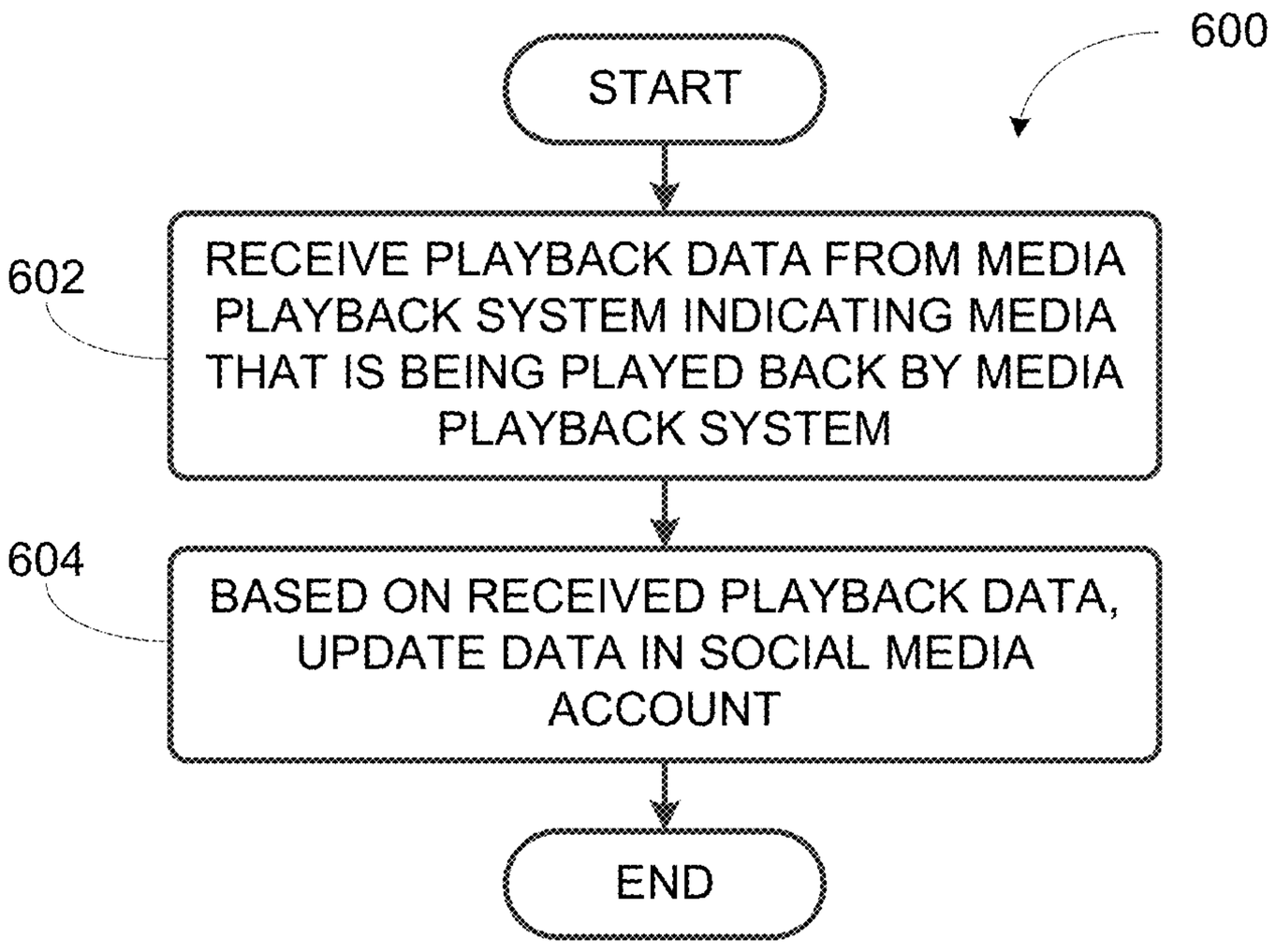
600
START
602
RECEIVE PLAYBACK DATA FROM MEDIA PLAYBACK SYSTEM INDICATING MEDIA THAT IS BEING PLAYED BACK BY MEDIA PLAYBACK SYSTEM
604
BASED ON RECEIVED PLAYBACK DATA, UPDATE DATA IN SOCIAL MEDIA ACCOUNT
END

FIGURE 6

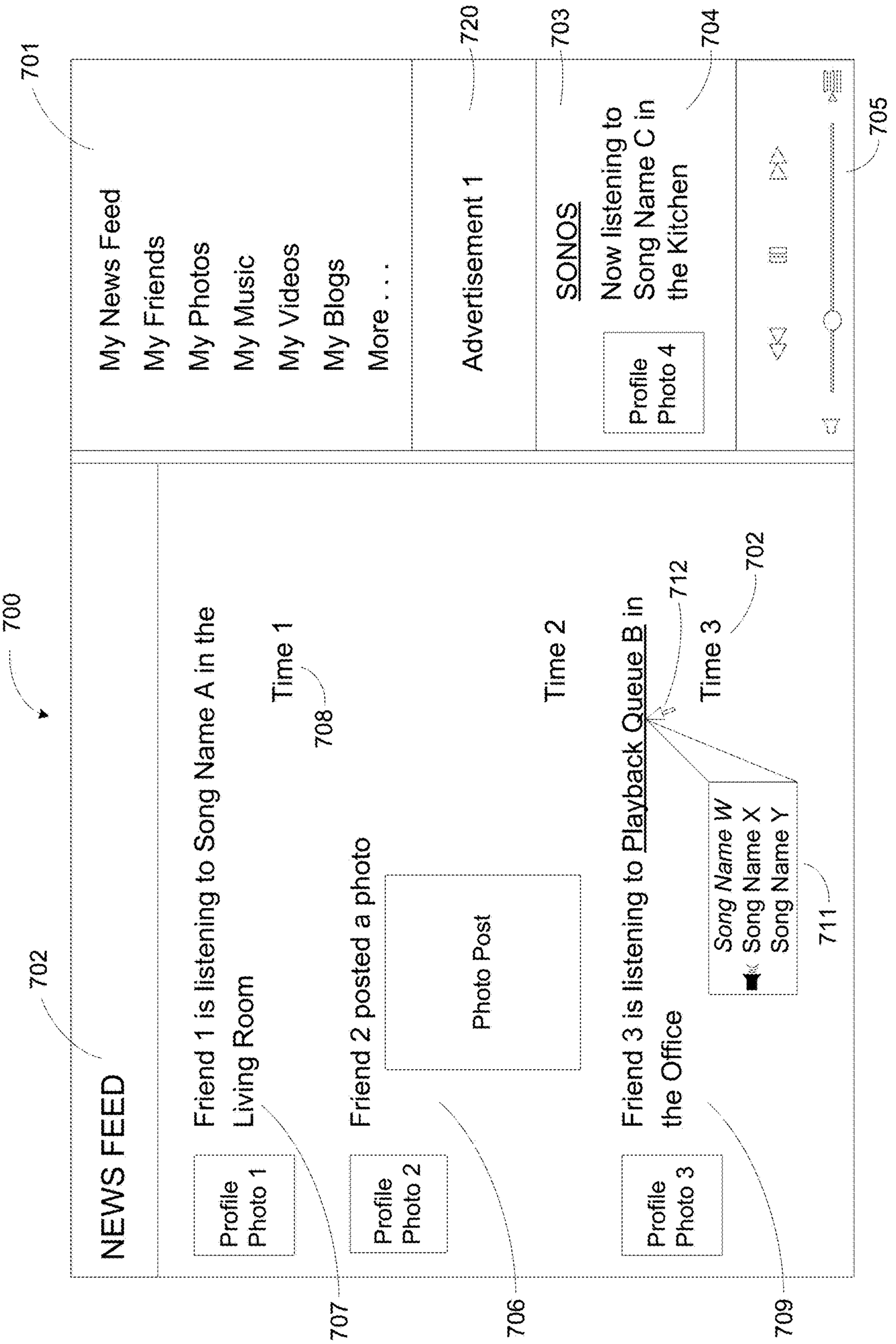
700
701
My News Feed
My Friends
My Photos
My Music
My Videos
My Blogs
More . . .
720
Advertisement 1
703
SONOS
Now listening to Song Name C in the Kitchen
704
Profile Photo 4
705
NEWS FEED
702
Friend 1 is listening to Song Name A in the Living Room
Time 1
708
Profile Photo 1
707
Friend 2 posted a photo
Photo Post
Time 2
706
Friend 3 is listening to Playback Queue B in the Office
712
Time 3
Song Name W
Song Name X
Song Name Y
711
Profile Photo 3
709

FIGURE 7A

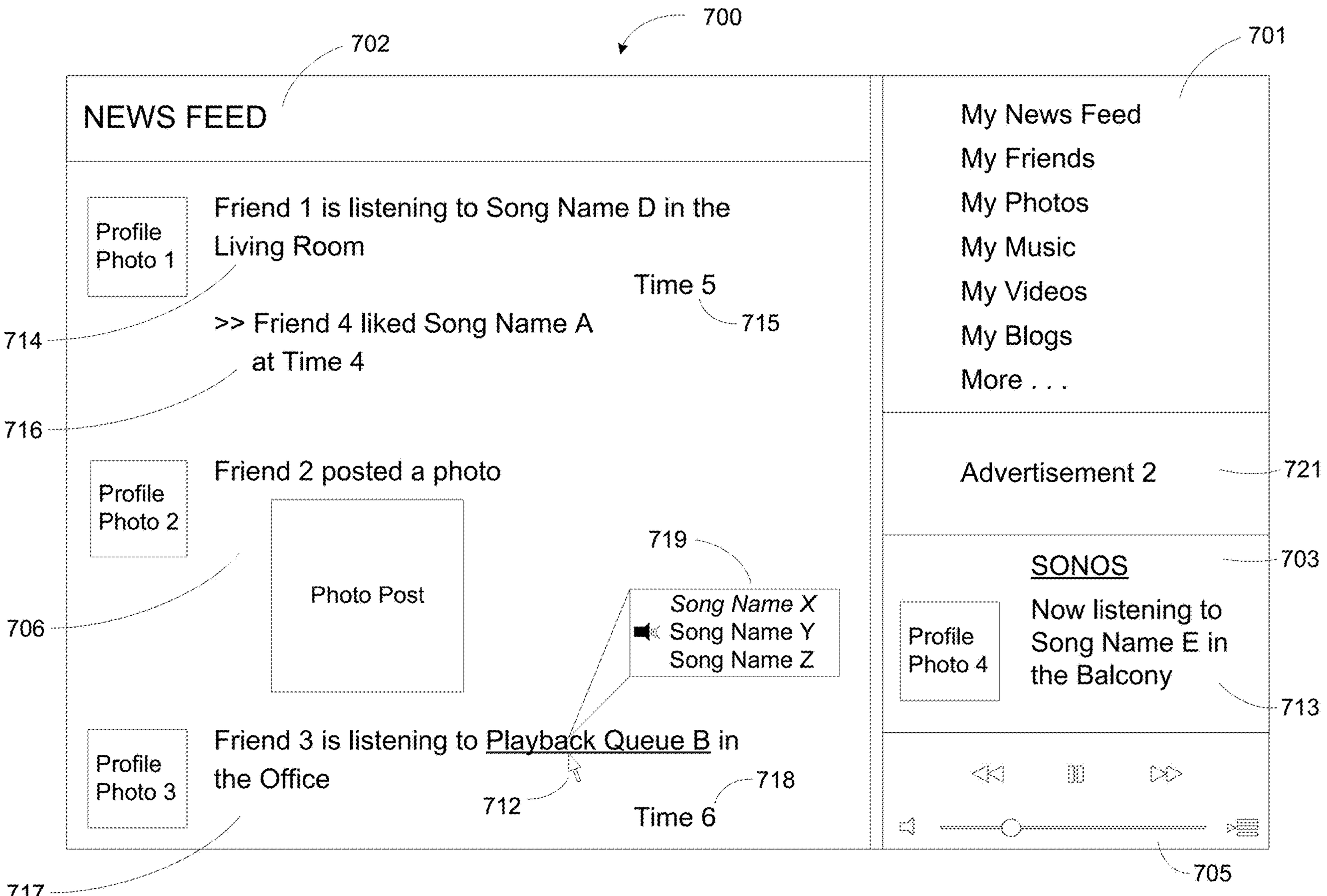
700
702
NEWS FEED
701
My News Feed
My Friends
My Photos
My Music
My Videos
My Blogs
More . . .
Profile Photo 1
Friend 1 is listening to Song Name D in the Living Room
Time 5
715
714
>> Friend 4 liked Song Name A at Time 4
716
Profile Photo 2
Friend 2 posted a photo
Photo Post
719
Song Name X
Song Name Y
Song Name Z
706
Advertisement 2
721
SONOS
703
Profile Photo 4
Now listening to Song Name E in the Balcony
713
Profile Photo 3
Friend 3 is listening to Playback Queue B in the Office
712
718
Time 6
717
705

FIGURE 7B

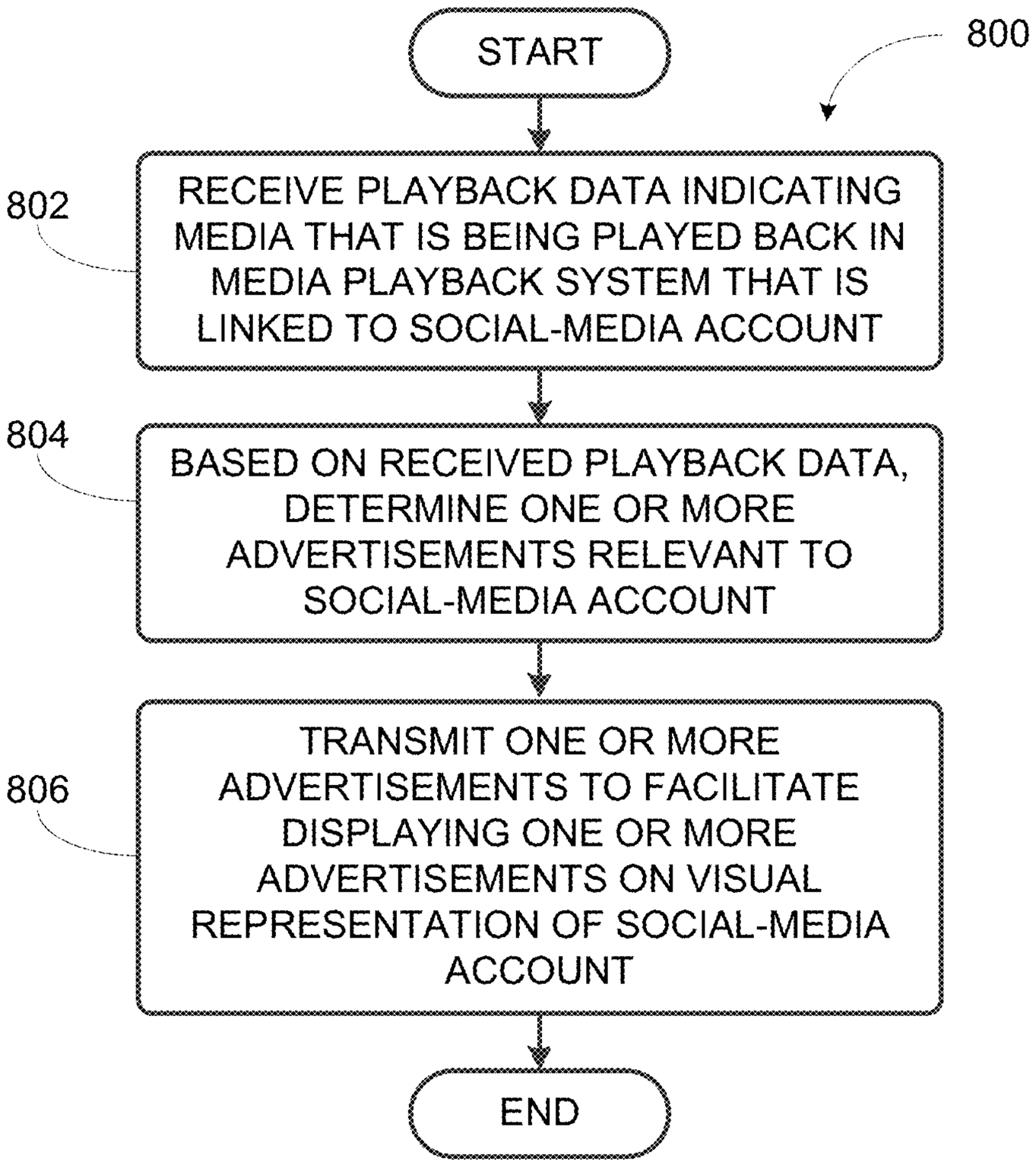
START
800
802
RECEIVE PLAYBACK DATA INDICATING MEDIA THAT IS BEING PLAYED BACK IN MEDIA PLAYBACK SYSTEM THAT IS LINKED TO SOCIAL-MEDIA ACCOUNT
804
BASED ON RECEIVED PLAYBACK DATA, DETERMINE ONE OR MORE ADVERTISEMENTS RELEVANT TO SOCIAL-MEDIA ACCOUNT
806
TRANSMIT ONE OR MORE ADVERTISEMENTS TO FACILITATE DISPLAYING ONE OR MORE ADVERTISEMENTS ON VISUAL REPRESENTATION OF SOCIAL-MEDIA ACCOUNT
END

FIGURE 8

PLAYBACK UPDATES

CROSS REFERENCE TO RELATED APPLICATIONS

This application is a continuation of and claims priority to U.S. patent application Ser. No. 14/495,633, filed on Sep. 24, 2014, entitled "Playback Updates," which is hereby incorporated by reference in its entirety. This application is also related to the following applications, the contents of each of which is hereby incorporated by reference in its entirety: U.S. Application Ser. No. 14/495,595, filed Sep. 24, 2014, now U.S. Pat. No. 9,690,540, entitled "Social Media Queue;" U.S. application Ser. No. 14/495,706, filed Sep. 24, 2014, now U.S. Pat. No. 9,667,679, entitled "Indicating an Association Between a Social-Media Account and a Media Playback System;" U.S. application Ser. No. 14/495,590, filed Sep. 24, 2014, now U.S. Pat. No. 9,860,286, entitled "Associating a Captured Image with a Media Item;" U.S. application Ser. No. 14/495,659, filed Sep. 24, 2014, now U.S. Pat. No. 9,959,087, entitled "Media Item Context from Social Media;" and U.S. application Ser. No. 14/495,684, filed Sep. 24, 2014, now U.S. Pat. No. 9,723,038, entitled "Social Media Connection Recommendation Based On Playback Information."

FIELD OF THE DISCLOSURE

The disclosure is related to consumer goods and, more particularly, to methods, systems, products, features, services, and other items directed to media playback or some aspect thereof.

BACKGROUND

Options for accessing and listening to digital audio in an out-loud setting were severely limited until in 2003, when SONOS, Inc. filed for one of its first patent applications, entitled "Method for Synchronizing Audio Playback between Multiple Networked Devices," and began offering a media playback system for sale in 2005. The Sonos Wireless HiFi System enables people to experience music from virtually unlimited sources via one or more networked playback devices. Through a software control application installed on a smartphone, tablet, or computer, one can play what he or she wants in any room that has a networked playback device. Additionally, using the controller, for example, different songs can be streamed to each room with a playback device, rooms can be grouped together for synchronous playback, or the same song can be heard in all rooms synchronously.

Given the ever growing interest in digital media, there continues to be a need to develop consumer-accessible technologies to further enhance the listening experience.

BRIEF DESCRIPTION OF THE DRAWINGS

Features, aspects, and advantages of the presently disclosed technology may be better understood with regard to the following description, appended claims, and accompanying drawings where:

FIG. **1** shows an example network configuration in which certain embodiments may be practiced;

FIG. **2** shows an example media playback system configuration;

FIG. **3** shows a functional block diagram of an example playback device;

FIG. **4** shows a functional block diagram of an example control device;

FIG. **5** shows an example controller interface;

FIG. **6** shows a flow diagram of an example method;

FIG. **7**A shows an example display of a portion of a social-media account;

FIG. **7**B shows another example display of a portion of a social-media account;

FIG. **8** shows a flow diagram of an example method.

The drawings are for the purpose of illustrating example embodiments, but it is understood that the inventions are not limited to the arrangements and instrumentality shown in the drawings.

DETAILED DESCRIPTION

I. Overview

Examples described herein generally involve social-media updates based on playback data. A social-media computing system may create social-media updates based on playback data received from a media playback system. The update may be a message posted in a subscriber's social-media account that may indicate what media is being played back, where (i.e., in which zone) in the media playback system the media is being played back, and when the media is being played back, among other examples. In some examples, the social-media computing system may also determine advertising relevant to the social-media account based on the playback data, and the advertising may then be displayed on a visual representation of the social-media account.

As indicated above, examples provided herein are directed to facilitating social-media updates based on playback data. In one aspect, a social-media computing system is provided. The social-media computing system includes: i) a processor; ii) a network interface; iii) a non-transitory computer-readable medium; and iv) program instructions stored on the non-transitory computer-readable medium that, when executed by the processor, cause the social-media computing system to: a) receive playback data indicating media that is being played back by a media playback system, where the playback data comprises an indication of at least one zone of the media playback system in which the media is being played back; and b) based on the received playback data, generate a playback message in a social-media account, where the playback message comprises an indication of the at least one zone in which the media is currently being played back.

In another aspect, a social-media computing system is provided. The social-media computing system includes: i) a processor; ii) a network interface; iii) a non-transitory computer-readable medium; and iv) program instructions stored on the non-transitory computer-readable medium that, when executed by the processor, cause the social-media computing system to: a) receive playback data indicating media that is being played back by a media playback system that is linked to a social-media account, where the playback data comprises an indication of at least one zone of the media playback system in which the media is being played back; b) based on the received playback data indicating the media, determine one or more advertisements relevant to the social-media account; and c) transmit, to a computing device affiliated with the social-media account, the one or more advertisements to facilitate displaying the one or more advertisements on a visual representation of the social-media account.

In yet another aspect, a method is provided. The method involves: i) receiving, by a social-media computing system from a media playback system, playback data indicating media that is being played back by the media playback system, where the playback data comprises an indication of at least one zone of the media playback system in which the media is being played back; and 2) based on the received playback data, updating social-media data in a social-media account, where the updated social-media data comprises an indication of the at least one zone in which the media is currently being played back.

It will be understood by one of ordinary skill in the art that this disclosure includes numerous other embodiments.

II. Example Network Configuration

FIG. **1** shows an example network configuration **100** in which one or more embodiments disclosed herein may be practiced or implemented. As shown, the network configuration **100** includes a wide area network ("WAN") **110** that communicatively couples a media system server **120**, a social-media server **130**, one or more media playback systems **140** and **142**, and one or more computing devices **150**, **152**, and **154**. It should be understood that the network configuration **100** may include more or fewer of the depicted network elements and/or may include various other network elements not shown in FIG. **1** (e.g. one or more media sources).

In examples, the WAN **110** may include the Internet and/or one or more cellular networks, among other networks. Although the WAN **110** is shown as one network, it should be understood that the WAN **110** may include multiple, distinct WANs that are themselves communicatively linked. The WAN **110** may facilitate transferring data between one or more of the various network elements shown in FIG. **1**. In some examples, a given network element may communicate with another network element through yet another network element. For instance, the media playback systems **140** and **142** may communicate with the social-media server **130** through the media system server **120** and/or the computing devices **150-154** may communicate with the media system server **120** through the social-media server **130**. Other examples are also possible.

In some examples, certain network elements may be communicatively coupled to other network elements via means other than the WAN **110**. In particular, certain network elements may be communicatively coupled via a local area network (e.g., via WiFi), a personal area network (e.g., via Bluetooth), and/or other connections (e.g., via a wired connection). For example, the computing device **150** may communicate with the media playback system **140** via a local area network (e.g., WiFi or perhaps according to a proprietary protocol). The computing device **150** may do so while operating as part of the media playback system **140** (e.g., as a control device).

The media system server **120** may include a network interface, a processing unit, and data storage, all of which may be communicatively linked together by a system bus, network, or other connection mechanism. The network interface may facilitate data flow over the WAN **110** between the media system server **120** and other network elements. The processing unit may include one or more general purpose processors and/or one or more special purpose processors and may be integrated in whole or in part with the network interface. The data storage may include a non-transitory computer-readable medium, such as optical, magnetic, or flash memory, and may be integrated in whole or in part with the processing unit. The data storage may also include program instructions that are executable by the processing unit to carry out various operations described herein.

Moreover, the media system server **120** may be configured to store and/or access various data related to media items and/or media playback systems. In examples, the media system server **120** may be configured to store and/or access media items that are playable by a media playback system. In such examples, the media system server **120** may be configured to provide to a given media playback system media items (e.g., audio, video, and/or audio-visual files) or links, pointers, or other network location identifiers that are operable to locate the media items. Additionally, the media system server **120** may be configured to store and/or access a cross-service linking database that facilitates identifying a media item from a first media source based on media item information from a second media source.

The media system server **120** may also be configured to provide one or more media applications to the media playback systems **140-142** and/or the computing devices **150-154**. In some cases, a media application may be operable to allow a computing device to control one or more media playback systems. Additionally or alternatively, a media application may be operable to allow a media playback system to interface with the social-media server **130** and playback media items based on social-media data. Further still, a media application may be operable to provide functions similar to those provided by a social-media application, discussed in further detail below. Other example media applications are also possible.

In examples, the media system server **120** may be configured to store and/or access account information corresponding to a particular media playback system. Such information, which may be collectively referred herein as a "playback system account", may include system information (e.g., a household identifier (HHID) that is used to uniquely identify the particular media playback system, identifiers of the devices within the particular system, the software version currently installed on the particular media playback system, etc.) user information (e.g., name, date of birth, etc. of the user or users of the particular system), playback history information (e.g., media items previously played on the particular system and perhaps timestamps indicating when such media items were played), playback preference information (e.g., frequency at which a given media item is played, indications of media items that have been "liked" or "starred", etc.), and linked-account information (e.g., one or more social-media accounts that are linked to the particular media playback system). Other examples of information storable and accessible by the media system server **120** are also possible.

In some examples, a playback system account may also include information regarding the media services that provide media to the particular media playback system. For example, the playback system account may include one or more identifiers of media services that provide media to the particular media playback system. Such information may be used by the media system server **120**, or perhaps the social media server **130**, to recommend media services that a user might be interested in. Other examples are also possible.

In practice, the media system server **120** may store some or all of the above-discussed information based on data received from media playback systems (e.g., the media playback systems **140** and **142**), the social-media server **130**, and/or the computing devices **150-154**. In examples, such information may be provided to the media system server **120**

when a media playback system is first setup, when a media playback system plays back media items, when a media playback system receives data indicating user feedback, and/or when a computing device runs a media application to control a media playback system, among other scenarios. In any event, the media system server **120** may be configured to provide an option to a user to "opt in" so that the aforementioned information is collected by the media system server **120**.

The media system server **120** may be further configured to use the above-discussed information to determine playback behaviors of users of media playback systems, among other operations. Based on user playback behaviors, the media system server **120** may perform a number of operations that may add to the users' playback experience. For example, such information may be used to identify a trending artist and then recommend that trending artist to a user whose playback history indicates he/she listens to other artists similar to the trending artist. Other examples are certainly possible.

The social-media server **130** may include a network interface, a processing unit, and data storage, similar to those of the media system server **120** discussed above. The social-media server **130** may be configured to provide a social-media service to subscribers to the service. For example, the social-media server **130** may be configured to establish and/or maintain a social network. To this end, the social-media server **130** may be configured to host a social-media webpage accessible over the WAN **110** by subscribers utilizing any suitable computing device, such as the computing devices **150-154**.

In examples, the social-media server **130** may be configured to store subscriber account information, which may be collectively referred herein as a "social-media account". Such information may include the name, gender, birthdate, email address, and/or residential address, among other information, for each subscriber. Moreover, the social-media server **130** may also be configured to link a given subscriber with a particular media playback system. For example, when a user first subscribes to the social-media service, the user may provide information, such as a HHID, of a media playback system used by the user, and the social-media server **130** may then store such information in the account of the subscriber.

In addition to subscriber account information, the social-media server **130** may also be configured to store respective subscriber profiles for each subscriber. Broadly speaking, a subscriber profile may include information regarding a subscriber's life, such as relationship status, photos, videos, career information, education information, hobbies/interests, locations visited (e.g., "check-in" locations), sports teams that the subscriber is a fan of, and/or movies, books, artists, TV shows, and the like that the subscriber previously experienced and perhaps enjoyed. Such information may be presented on a subscriber profile in a number of manners, such as through subscriber posts, status updates, blogs, and other uploads.

The social network provided by the social-media server **130** may be configured so that subscribers may readily share and exchange information, ideas, creations, and the like over a virtual community. The social-media service may provide to its subscribers, via a social-media webpage, respective social-media information that is determined to be relevant to a particular subscriber. Such information may be provided in several manners (e.g., as a "news feed", "timeline", or the like) and may be personalized to fit the preferences of a particular subscriber. In examples, this information may be continuously updated to reflect the most current information that may be relevant to a particular subscriber.

A given subscriber may have certain "friends" that he/she chooses to associate with on an example social network. After someone is deemed a "friend" with a given subscriber, the given subscriber may then receive social information that is uploaded, tagged, posted, or otherwise provided by the "friend." For example, the given subscriber's news feed may show a photograph that a "friend" captured and subsequently posted to the social-media webpage. Moreover, a listing of a given subscriber's "friends" may also be provided and that listing may include various information in various forms reflecting a current "status" or the like for a given "friend." The given subscriber may also be able to "de-friend" someone that was previously deemed a "friend."

In practice, the social-media server **130** may be configured to collect and analyze the information that is shared and exchanged over the social-media service. The social-media server **130** may be configured to use this collected information, as well as subscriber account information, to determine for a particular subscriber other subscribers that the particular subscriber might want to become "friends" with. In this way, the social-media server **130** may be configured to determine the preferences and/or tastes of its subscribers and recommend other subscribers with similar tastes.

Moreover, the social-media server **130** may be configured to provide one or more social-media applications that are operable to provide subscribers access to the social-media service in a manner different than through a web browser. Such an application may be installed on a computing device that is perhaps portable. In examples, a social-media application may further be operable to provide functions similar to those provided by a media application, as discussed above.

Furthermore, a social-media application, and/or perhaps a media application, installed on a computing device may be operable to determine what, if any, other applications are also installed on the computing device. An application that is operable in such a manner may facilitate linking a playback system account with a social-media account and vice versa. In examples, after a social-media application installed on a computing device is linked to a playback system account, the social-media application may be operable to affect playback of media at a media playback system identified by the playback system account.

In examples, the network configuration **100** may also include one or more media service provider servers communicatively coupled to the WAN **110**. In general, a given media service provider server may correspond to a media service provider that provides streaming media, such as Internet radio and/or "on-demand" media, to the media playback systems **140-142** and/or the computing devices **150-154**. A user may subscribe to such a service and register media devices (e.g., a media playback system and/or one or more computing devices) that may at times be used to access the media service. A media service provider server may include similar components as the servers discussed above.

Generally speaking, the media playback systems **140** and **142** may be any type of media playback system configured to receive and transmit data over a communication network and playback media items. In practice, each media playback system **140** and **142** may include one or more playback devices, as well as additional system devices (e.g., a controller device). An example media playback system is discussed in further detail below with reference to FIG. **2**. It should be understood that the media playback system **140**

and the media playback system **142** may be configured similarly or differently and/or may include similar or different devices.

In general, each computing device **150-154** may be any computing device configured to transfer data over a communication network. The computing devices **150-154** may each include at least one processor, memory, a graphical display, an input interface, and a network interface, among other components. In some instances, the graphical display and the input interface may be part of the same component (e.g., a touchscreen). The network interface may facilitate data flow between the computing device and another network element, for example, via the WAN **110**. In some examples, one or more of the computing devices **150-154** may also include a camera configured to capture image and/or video data. Example computing devices include, but are not limited to, cellular phones, smartphones, PDAs, tablets, laptops, desktop computers, video game consoles, and smart TVs.

Moreover, the computing devices **150-154** may be configured to download, install, and operate an application, such as a media or social-media application. In examples, a given computing device may include a media application provided by the media system server **120** and a social-media application provided by the social media server **130**, while another computing device may include one or the other application but not both.

A computing device may be configured to run both applications at the same time or individually. In some examples, the computing devices **150-154** may provide to the media system server **120** and/or the social media server **130** an indication of applications that are installed on a particular computing device. For instance, the computing device **150** may be configured to provide to the media system server **120** an indication that a social-media application is installed. Additionally or alternatively, the computing device **150** may be configured to provide to the social-media server **130** an indication that a media application is installed and/or active or otherwise currently running.

Furthermore, a computing device may be configured to provide social media information and/or media playback information to the media system server **120** and/or the social media server **130**. Such information may then be used by the media system server **120** and/or the social media server **130** to help perform some of the operations disclosed in further detail below.

III. Example Media Playback System

FIG. **2** shows an example configuration of a media playback system **200**. The media playback system **200** as shown is associated with an example home environment having several rooms and spaces, such as for example, a master bedroom, an office, a dining room, and a living room. As shown in the example of FIG. **2**, the media playback system **200** includes playback devices **202-224**, control devices **226** and **228**, and a wired or wireless network router **230**.

Further discussions relating to the different components of the example media playback system **200** and how the different components may interact to provide a user with a media experience may be found in the following sections. While discussions herein may generally refer to the example media playback system **200**, technologies described herein are not limited to applications within, among other things, the home environment as shown in FIG. **2**. For instance, the technologies described herein may be useful in environments where multi-zone audio may be desired, such as, for example, a commercial setting like a restaurant, mall or airport, a vehicle like a sports utility vehicle (SUV), bus or car, a ship or boat, an airplane, and so on.

a. Example Playback Devices

FIG. **3** shows a functional block diagram of an example playback device **300** that may be configured to be one or more of the playback devices **202-224** of the media playback system **200** of FIG. **2**. The playback device **300** may include a processor **302**, software components **304**, memory **306**, audio processing components **308**, audio amplifier(s) **310**, speaker(s) **312**, and a network interface **314** including wireless interface(s) **316** and wired interface(s) **318**. In one case, the playback device **300** may not include the speaker(s) **312**, but rather a speaker interface for connecting the playback device **300** to external speakers. In another case, the playback device **300** may include neither the speaker(s) **312** nor the audio amplifier(s) **310**, but rather an audio interface for connecting the playback device **300** to an external audio amplifier or audio-visual receiver.

In one example, the processor **302** may be a clock-driven computing component configured to process input data according to instructions stored in the memory **306**. The memory **306** may be a tangible computer-readable medium configured to store instructions executable by the processor **302**. For instance, the memory **306** may be data storage that can be loaded with one or more of the software components **304** executable by the processor **302** to achieve certain functions. In one example, the functions may involve the playback device **300** retrieving audio data from an audio source or another playback device. In another example, the functions may involve the playback device **300** sending audio data to another device or playback device on a network. In yet another example, the functions may involve pairing of the playback device **300** with one or more playback devices to create a multi-channel audio environment.

Certain functions may involve the playback device **300** synchronizing playback of audio content with one or more other playback devices. During synchronous playback, a listener will preferably not be able to perceive time-delay differences between playback of the audio content by the playback device **300** and the one or more other playback devices. U.S. Pat. No. 8,234,395 entitled, "System and method for synchronizing operations among a plurality of independently clocked digital data processing devices," which is hereby incorporated by reference, provides in more detail some examples for audio playback synchronization among playback devices.

The memory **306** may further be configured to store data associated with the playback device **300**, such as one or more zones and/or zone groups the playback device **300** is a part of, audio sources accessible by the playback device **300**, or a playback queue that the playback device **300** (or some other playback device) may be associated with. The data may be stored as one or more state variables that are periodically updated and used to describe the state of the playback device **300**. The memory **306** may also include the data associated with the state of the other devices of the media system, and shared from time to time among the devices so that one or more of the devices have the most recent data associated with the system. Other embodiments are also possible.

The audio processing components **308** may include one or more digital-to-analog converters (DAC), an audio prepro-

cessing component, an audio enhancement component or a digital signal processor (DSP), and so on. In one embodiment, one or more of the audio processing components **308** may be a subcomponent of the processor **302**. In one example, audio content may be processed and/or intentionally altered by the audio processing components **308** to produce audio signals. The produced audio signals may then be provided to the audio amplifier(s) **310** for amplification and playback through speaker(s) **312**. Particularly, the audio amplifier(s) **310** may include devices configured to amplify audio signals to a level for driving one or more of the speakers **312**. The speaker(s) **312** may include an individual transducer (e.g., a "driver") or a complete speaker system involving an enclosure with one or more drivers. A particular driver of the speaker(s) **312** may include, for example, a subwoofer (e.g., for low frequencies), a mid-range driver (e.g., for middle frequencies), and/or a tweeter (e.g., for high frequencies). In some cases, each transducer in the one or more speakers **312** may be driven by an individual corresponding audio amplifier of the audio amplifier(s) **310**. In addition to producing analog signals for playback by the playback device **300**, the audio processing components **308** may be configured to process audio content to be sent to one or more other playback devices for playback.

Audio content to be processed and/or played back by the playback device **300** may be received from an external source, such as via an audio line-in input connection (e.g., an auto-detecting 3.5 mm audio line-in connection) or the network interface **314**.

The network interface **314** may be configured to facilitate a data flow between the playback device **300** and one or more other devices on a data network. As such, the playback device **300** may be configured to receive audio content over the data network from one or more other playback devices in communication with the playback device **300**, network devices within a local area network, or audio content sources over a wide area network such as the Internet. In one example, the audio content and other signals transmitted and received by the playback device **300** may be transmitted in the form of digital packet data containing an Internet Protocol (IP)-based source address and IP-based destination addresses. In such a case, the network interface **314** may be configured to parse the digital packet data such that the data destined for the playback device **300** is properly received and processed by the playback device **300**.

As shown, the network interface **314** may include wireless interface(s) **316** and wired interface(s) **318**. The wireless interface(s) **316** may provide network interface functions for the playback device **300** to wirelessly communicate with other devices (e.g., other playback device(s), speaker(s), receiver(s), network device(s), control device(s), controller device(s) within a data network the playback device **300** is associated with) in accordance with a communication protocol (e.g., any wireless standard including IEEE 802.11a, 802.11b, 802.11g, 802.11n, 802.11ac, 802.15, 4G mobile communication standard, and so on). The wired interface(s) **318** may provide network interface functions for the playback device **300** to communicate over a wired connection with other devices in accordance with a communication protocol (e.g., IEEE 802.3). While the network interface **314** shown in FIG. **3** includes both wireless interface(s) **316** and wired interface(s) **318**, the network interface **314** may in some embodiments include only wireless interface(s) or only wired interface(s).

In one example, the playback device **300** and one other playback device may be paired to play two separate audio components of audio content. For instance, playback device **300** may be configured to play a left channel audio component, while the other playback device may be configured to play a right channel audio component, thereby producing or enhancing a stereo effect of the audio content. The paired playback devices (also referred to as "bonded playback devices") may further play audio content in synchrony with other playback devices.

In another example, the playback device **300** may be sonically consolidated with one or more other playback devices to form a single, consolidated playback device. A consolidated playback device may be configured to process and reproduce sound differently than an unconsolidated playback device or playback devices that are paired, because a consolidated playback device may have additional speaker drivers through which audio content may be rendered. For instance, if the playback device **300** is a playback device designed to render low frequency range audio content (i.e. a subwoofer), the playback device **300** may be consolidated with a playback device designed to render full frequency range audio content. In such a case, the full frequency range playback device, when consolidated with the low frequency playback device **300**, may be configured to render only the mid and high frequency components of audio content, while the low frequency range playback device **300** renders the low frequency component of the audio content. The consolidated playback device may further be paired with a single playback device or yet another consolidated playback device.

By way of illustration, SONOS, Inc. presently offers (or has offered) for sale certain playback devices including a "PLAY:1," "PLAY:3," "PLAY:5," "PLAYBAR," "CONNECT:AMP," "CONNECT," and "SUB." Any other past, present, and/or future playback devices may additionally or alternatively be used to implement the playback devices of example embodiments disclosed herein. Additionally, it is understood that a playback device is not limited to the example illustrated in FIG. **3** or to the SONOS product offerings. For example, a playback device may include a wired or wireless headphone. In another example, a playback device may include or interact with a docking station for personal mobile media playback devices. In yet another example, a playback device may be integral to another device or component such as a television, a lighting fixture, or some other device for indoor or outdoor use.

b. Example Playback Zone Configurations

Referring back to the media playback system **200** of FIG. **2**, the environment may have one or more playback zones, each with one or more playback devices. The media playback system **200** may be established with one or more playback zones, after which one or more zones may be added, or removed to arrive at the example configuration shown in FIG. **2**. Each zone may be given a name according to a different room or space such as an office, bathroom, master bedroom, bedroom, kitchen, dining room, living room, and/or balcony. In one case, a single playback zone may include multiple rooms or spaces. In another case, a single room or space may include multiple playback zones.

As shown in FIG. **2**, the balcony, dining room, kitchen, bathroom, office, and bedroom zones each have one playback device, while the living room and master bedroom zones each have multiple playback devices. In the living room zone, playback devices **204**, **206**, **208**, and **210** may be configured to play audio content in synchrony as individual playback devices, as one or more bonded playback devices, as one or more consolidated playback devices, or any

combination thereof. Similarly, in the case of the master bedroom, playback devices **222** and **224** may be configured to play audio content in synchrony as individual playback devices, as a bonded playback device, or as a consolidated playback device.

In one example, one or more playback zones in the environment of FIG. **2** may each be playing different audio content. For instance, the user may be grilling in the balcony zone and listening to hip hop music being played by the playback device **202** while another user may be preparing food in the kitchen zone and listening to classical music being played by the playback device **214**. In another example, a playback zone may play the same audio content in synchrony with another playback zone. For instance, the user may be in the office zone where the playback device **218** is playing the same rock music that is being playing by playback device **202** in the balcony zone. In such a case, playback devices **202** and **218** may be playing the rock music in synchrony such that the user may seamlessly (or at least substantially seamlessly) enjoy the audio content that is being played out-loud while moving between different playback zones. Synchronization among playback zones may be achieved in a manner similar to that of synchronization among playback devices, as described in previously referenced U.S. Pat. No. 8,234,395.

As suggested above, the zone configurations of the media playback system **200** may be dynamically modified, and in some embodiments, the media playback system **100** supports numerous configurations. For instance, if a user physically moves one or more playback devices to or from a zone, the media playback system **200** may be reconfigured to accommodate the change(s). For instance, if the user physically moves the playback device **202** from the balcony zone to the office zone, the office zone may now include both the playback device **218** and the playback device **202**. The playback device **202** may be paired or grouped with the office zone and/or renamed if so desired via a control device such as the control devices **226** and **228**. On the other hand, if the one or more playback devices are moved to a particular area in the home environment that is not already a playback zone, a new playback zone may be created for the particular area.

Further, different playback zones of the media playback system **200** may be dynamically combined into zone groups or split up into individual playback zones. For instance, the dining room zone and the kitchen zone **214** may be combined into a zone group for a dinner party such that playback devices **212** and **214** may render audio content in synchrony. On the other hand, the living room zone may be split into a television zone including playback device **204**, and a listening zone including playback devices **206**, **208**, and **210**, if the user wishes to listen to music in the living room space while another user wishes to watch television.

c. Example Control Devices

FIG. **4** shows a functional block diagram of an example control device **400** that may be configured to be one or both of the control devices **226** and **228** of the media playback system **200**. As shown, the control device **400** may include a processor **402**, memory **404**, a network interface **406**, and a user interface **408**. In one example, the control device **400** may be a dedicated controller for the media playback system **200**.

In another example, the control device **400** may be a network device on which media application software is installed, such as an iPhone™, iPad™ or any other smart phone, tablet or network device (e.g., a networked computer such as a PC or Mac™). In examples, the media application may take the form of a media playback system controller application operable to control a media playback system. In yet another example, the media application may be operable to cause the control device **400** to obtain media (e.g., from a given media service provider associated with the media application) independent from a media playback system and may also be operable as a control device of a media playback system.

The processor **402** may be configured to perform functions relevant to facilitating user access, control, and configuration of the media playback system **200**. The memory **404** may be configured to store instructions executable by the processor **402** to perform those functions. The memory **404** may also be configured to store the media playback system controller application software and other data associated with the media playback system **200** and the user.

In one example, the network interface **406** may be based on an industry standard (e.g., infrared, radio, wired standards including IEEE 802.3, wireless standards including IEEE 802.11a, 802.11b, 802.11g, 802.11n, 802.11ac, 802.15, 4G mobile communication standard, and so on). The network interface **406** may provide a means for the control device **400** to communicate with other devices in the media playback system **200**. In one example, data and information (e.g., such as a state variable) may be communicated between control device **400** and other devices via the network interface **406**. For instance, playback zone and zone group configurations in the media playback system **200** may be received by the control device **400** from a playback device or another network device, or transmitted by the control device **400** to another playback device or network device via the network interface **406**. In some cases, the other network device may be another control device.

Playback device control commands such as volume control and audio playback control may also be communicated from the control device **400** to a playback device via the network interface **406**. As suggested above, changes to configurations of the media playback system **200** may also be performed by a user using the control device **400**. The configuration changes may include adding/removing one or more playback devices to/from a zone, adding/removing one or more zones to/from a zone group, forming a bonded or consolidated player, separating one or more playback devices from a bonded or consolidated player, among others. Accordingly, the control device **400** may sometimes be referred to as a controller, whether the control device **400** is a dedicated controller or a network device on which media playback system controller application software is installed.

The user interface **408** of the control device **400** may be configured to facilitate user access and control of the media playback system **200**, by providing a controller interface such as the controller interface **500** shown in FIG. **5**. The controller interface **500** includes a playback control region **510**, a playback zone region **520**, a playback status region **530**, a playback queue region **540**, and an audio content sources region **550**. The user interface **500** as shown is just one example of a user interface that may be provided on a network device such as the control device **400** of FIG. **4** (and/or the control devices **226** and **228** of FIG. **2**) and accessed by users to control a media playback system such as the media playback system **200**. Other user interfaces of varying formats, styles, and interactive sequences may alternatively be implemented on one or more network devices to provide comparable control access to a media playback system.

The playback control region **510** may include selectable (e.g., by way of touch or by using a cursor) icons to cause playback devices in a selected playback zone or zone group to play or pause, fast forward, rewind, skip to next, skip to previous, enter/exit shuffle mode, enter/exit repeat mode, enter/exit cross fade mode. The playback control region **510** may also include selectable icons to modify equalization settings, and playback volume, among other possibilities.

The playback zone region **520** may include representations of playback zones within the media playback system **200**. In some embodiments, the graphical representations of playback zones may be selectable to bring up additional selectable icons to manage or configure the playback zones in the media playback system, such as a creation of bonded zones, creation of zone groups, separation of zone groups, and renaming of zone groups, among other possibilities.

For example, as shown, a "group" icon may be provided within each of the graphical representations of playback zones. The "group" icon provided within a graphical representation of a particular zone may be selectable to bring up options to select one or more other zones in the media playback system to be grouped with the particular zone. Once grouped, playback devices in the zones that have been grouped with the particular zone will be configured to play audio content in synchrony with the playback device(s) in the particular zone. Analogously, a "group" icon may be provided within a graphical representation of a zone group. In this case, the "group" icon may be selectable to bring up options to deselect one or more zones in the zone group to be removed from the zone group. Other interactions and implementations for grouping and ungrouping zones via a user interface such as the user interface **500** are also possible. The representations of playback zones in the playback zone region **520** may be dynamically updated as playback zone or zone group configurations are modified.

The playback status region **530** may include graphical representations of audio content that is presently being played, previously played, or scheduled to play next in the selected playback zone or zone group. The selected playback zone or zone group may be visually distinguished on the user interface, such as within the playback zone region **520** and/or the playback status region **530**. The graphical representations may include track title, artist name, album name, album year, track length, and other relevant information that may be useful for the user to know when controlling the media playback system via the user interface **500**.

The playback queue region **540** may include graphical representations of audio content in a playback queue associated with the selected playback zone or zone group. In some embodiments, each playback zone or zone group may be associated with a playback queue containing information corresponding to zero or more audio items for playback by the playback zone or zone group. For instance, each audio item in the playback queue may comprise a uniform resource identifier (URI), a uniform resource locator (URL) or some other identifier that may be used by a playback device in the playback zone or zone group to find and/or retrieve the audio item from a local audio content source or a networked audio content source, possibly for playback by the playback device.

In one example, a playlist may be added to a playback queue, in which case information corresponding to each audio item in the playlist may be added to the playback queue. In another example, audio items in a playback queue may be saved as a playlist. In a further example, a playback queue may be empty, or populated but "not in use" when the playback zone or zone group is playing continuously streaming audio content, such as Internet radio that may continue to play until otherwise stopped, rather than discrete audio items that have playback durations. In an alternative embodiment, a playback queue can include Internet radio and/or other streaming audio content items and be "in use" when the playback zone or zone group is playing those items. Other examples are also possible.

When playback zones or zone groups are "grouped" or "ungrouped," playback queues associated with the affected playback zones or zone groups may be cleared or re-associated. For example, if a first playback zone including a first playback queue is grouped with a second playback zone including a second playback queue, the established zone group may have an associated playback queue that is initially empty, that contains audio items from the first playback queue (such as if the second playback zone was added to the first playback zone), that contains audio items from the second playback queue (such as if the first playback zone was added to the second playback zone), or a combination of audio items from both the first and second playback queues. Subsequently, if the established zone group is ungrouped, the resulting first playback zone may be re-associated with the previous first playback queue, or be associated with a new playback queue that is empty or contains audio items from the playback queue associated with the established zone group before the established zone group was ungrouped. Similarly, the resulting second playback zone may be re-associated with the previous second playback queue, or be associated with a new playback queue that is empty, or contains audio items from the playback queue associated with the established zone group before the established zone group was ungrouped. Other examples are also possible.

Referring back to the user interface **500** of FIG. **5**, the graphical representations of audio content in the playback queue region **540** may include track titles, artist names, track lengths, and other relevant information associated with the audio content in the playback queue. In one example, graphical representations of audio content may be selectable to bring up additional selectable icons to manage and/or manipulate the playback queue and/or audio content represented in the playback queue. For instance, a represented audio content may be removed from the playback queue, moved to a different position within the playback queue, or selected to be played immediately, or after any currently playing audio content, among other possibilities. A playback queue associated with a playback zone or zone group may be stored in a memory on one or more playback devices in the playback zone or zone group, on a playback device that is not in the playback zone or zone group, and/or some other designated device.

The audio content sources region **550** may include graphical representations of selectable audio content sources from which audio content may be retrieved and played by the selected playback zone or zone group. Discussions pertaining to audio content sources may be found in the following section.

d. Example Audio Content Sources

As indicated previously, one or more playback devices in a zone or zone group may be configured to retrieve for playback audio content (e.g. according to a corresponding URI or URL for the audio content) from a variety of available audio content sources. In one example, audio content may be retrieved by a playback device directly from a corresponding audio content source (e.g., a line-in con-

nection). In another example, audio content may be provided to a playback device over a network via one or more other playback devices or network devices.

Example audio content sources may include a memory of one or more playback devices in a media playback system such as the media playback system **200** of FIG. **2**, local music libraries on one or more network devices (such as a control device, a network-enabled personal computer, or a networked-attached storage (NAS), for example), streaming audio services providing audio content via the Internet (e.g., the media service servers **135-145**), or audio sources connected to the media playback system via a line-in input connection on a playback device or network devise, among other possibilities.

In some embodiments, audio content sources may be regularly added or removed from a media playback system such as the media playback system **200** of FIG. **2**. In one example, an indexing of audio items may be performed whenever one or more audio content sources are added, removed or updated. Indexing of audio items may involve scanning for identifiable audio items in all folders/directory shared over a network accessible by playback devices in the media playback system, and generating or updating an audio content database containing metadata (e.g., title, artist, album, track length, among others) and other associated information, such as a URI or URL for each identifiable audio item found. Other examples for managing and maintaining audio content sources may also be possible.

The above discussions relating to playback devices, controller devices, playback zone configurations, and media content sources provide only some examples of operating environments within which functions and methods described below may be implemented. Other operating environments and configurations of media playback systems, playback devices, and network devices not explicitly described herein may also be applicable and suitable for implementation of the functions and methods.

IV. Social-Media Updates Based on Playback Data

As discussed above, examples provided herein are directed to facilitating social-media updates based on playback data.

For method **600** and **800** of FIGS. **6** and **8**, and other processes and methods disclosed herein, the flowcharts show functionality and operation of one possible implementation of present embodiments. In this regard, each block may represent a module, a segment, or a portion of program code, which includes one or more instructions executable by a processor for implementing specific logical functions or steps in the process. The program code may be stored on any type of computer-readable medium, for example, such as a storage device including a disk or hard drive. The computer-readable medium may include non-transitory computer-readable medium, for example, such as computer-readable media that stores data for short periods of time like register memory, processor cache and Random Access Memory (RAM). The computer-readable medium may also include non-transitory media, such as secondary or persistent long term storage, like read only memory (ROM), optical or magnetic disks, compact-disc read only memory (CD-ROM), for example. The computer-readable media may also be any other volatile or non-volatile storage systems. The computer-readable medium may be considered a computer-readable storage medium, for example, or a tangible storage device. In addition, for the methods **600** and **800**, and other processes and methods disclosed herein, each block in FIGS. **6** and **8** may represent circuitry that is wired to perform the specific logical functions in the process.

Furthermore, although the blocks are illustrated in sequential order, these blocks may also be performed in parallel, and/or in a different order than those described herein. Also, the various blocks may be combined into fewer blocks, divided into additional blocks, and/or removed based upon the desired implementation.

For clarity, the methods may be described herein with reference to FIGS. **7**A and **7**B. It should be understood, however, that this is for purposes of example and explanation only and that the operations of the methods should not be limited by these figures.

a. First Example Method to Facilitate Social-Media Updates Based on Playback Data

At block **602**, a social-media computing system may receive playback data from a media playback system indicating media that is being played back by the media playback system. The social-media computing system may be, for instance, a single computing device, such as a server, or it may be a collection of devices, such as multiple servers. For the purposes of the examples discussed below, the social-media computing device will be referred to as the social-media server **130** shown in FIG. **1**.

The media playback system may be, for instance, the media playback system **200** shown in FIG. **2**, although other media playback systems having other configurations are also possible. In some examples, the media playback system **200** may be linked to a social-media account. For instance, as discussed above, the media playback system **200** may correspond to a playback system account that is linked to the social-media account through a media and/or social-media application, or through communications between the social-media server **130** and a media playback server, such as the media playback server **120**, among other examples. Accordingly, in some instances the social-media server **130** may, before receiving the playback data, link the social-media account to the media playback system **200**.

In this way, certain social-media activities related to the social-media account may affect playback of media by the media playback system **200**. For example, social-media "friends" (e.g., subscribers whose accounts are within a social-media network of the linked social-media account) may contribute to a social-media playback queue that the media playback system **200** may access and play media from. Other examples are also possible.

The playback data received by the social-media server **130** may include a variety of information regarding media that is being played back by the media playback system **200**. For example, the playback data may include an identification of the media that is being played back, such as a song name, an artist name, an album name, and the like. In some examples, the playback data may include a timestamp corresponding to the played back media. The timestamp may be, for instance, an indication of the time of day that playback of the media began or perhaps ended. Other examples are also possible.

The playback data may also include an indication of at least one zone of the media playback system **200** in which the media is being played back. For example, the playback data may indicate that the media is being played back in a particular zone or zone group of the media playback system **200**, such as the Living Room zone or the Kitchen zone.

In some cases, the playback data may additionally or alternatively include an indication of a playback queue in

addition to or instead of a single media item. For example, the indication of the playback queue may indicate one or more media items from a playback queue that the media playback system **200** is currently playing back. Such an indication may indicate one or more media items from the playback queue that have yet to be played or that have previously been played or both.

In some examples, where the social-media account is linked with the media playback system **200**, the social-media account may have a social-media playback queue linked with the social-media account. The social-media playback queue may be accessible, for example, through a social-media profile or wall or the like of the social-media account. In any event, the indication of the playback queue may include an indication of a social-media playback queue that corresponds to the social-media account. The playback data may include other information pertaining to the social-media account that is linked to the media playback system **200** as well.

In examples, an indication of a social-media playback queue may take the form or otherwise include a selectable link or other network location mechanism that is operable to direct a computing device or a media playback system to the social-media playback queue. In particular, the selectable link may be configured to direct a media playback system to a network storage space that stores the social-media playback queue so that the media playback system may play back media items from the queue. Moreover, the selectable link may also be configured to a direct a computing device (such as any of the computing devices **150-154**) to the social-media playback queue so that the computing device may display a visual representation of the social-media playback queue. A user may then use the computing device to contribute to the social-media playback queue. Other examples are also possible.

At block **604**, the social-media server **130** may, based on the received playback data, update social-media data in the social-media account. The social-media data may include the subscriber account information or subscriber profile information discussed in the sections above, among other examples.

For instance, updating the social-media data in the social-media account based on the playback data may involve the social-media server **130** updating the subscriber profile, such as a profile picture of the subscriber. For example, the subscriber may designate a specific profile photo for use when playing back media in the media playback system **200**, and the social-media server **130** may update the profile photo based on the received playback data. Alternatively, the social-media server **130** may temporarily replace the subscriber's profile photo with album art corresponding to the played back media. As yet another example, the social-media server **130** may modify the subscriber's profile photo to add a banner or other indicia that indicates the playback of media, or to add text overlaid on the profile photo that may indicate the name of the media that is being played back. Other possibilities also exist.

After updating the subscriber profile, the social-media server **130** may provide data representing the updated subscriber profile to facilitate displaying a visual representation of the updated subscriber profile. For instance, the social-media server **130** may provide the data to a computing device, such as the computing device **150** in FIG. **1**, that may display a visual representation of the profile via a web browser of social-media application, among other possibilities.

As another example, updating the social-media data in the social-media account may additionally or alternatively involve the social-media server **130** generating a playback message in the social-media account. The playback message may be, for instance, a status indicator, a blog post, a timeline entry, a news feed item, among other messages in the social-media account that the subscriber may post or upload, which may then be communicated over the social network. The generated playback message may include the playback data discussed above, such as a subscriber name, a song identity, a playback queue name, and an indication of the at least one zone in which the media is currently being played back. For example, the social-media server **130** may generate a status indicator for the social-media account that indicates that the subscriber is listening to a given song in a given zone of the subscriber's media playback system **200**.

FIG. **7**A shows an example of social-media account **700** as it might be at least partially displayed via a web browser or a social-media application on a computing device, such as the computing device **150** shown in FIG. **1**. The social-media account **700** may include features such as a menu **701** for navigating to other content in the account **700** and a news feed **702** that may provide information from other subscribers of the social network.

The social-media account **700** may also include a status field **703** where the subscriber may provide a status indicator. In this example, the social-media server **130** has, based on the received playback data, generated a status indicator that includes the playback message **704** "Now listening to Song Name C in the Kitchen." Further, the social-media account **700** may include playback controls **705** corresponding to the linked media playback system **200**.

The news feed **702** of the social-media account **700** may display status updates and other posts from the accounts of the subscriber's "friends" as well as other information that the social-media server **130** determines is relevant to the social-media account **700**. For instance, FIG. **7**A shows an example post **706** in which the subscriber's "friend" Friend 2 posted a picture to his or her social-media account, which was then displayed in the subscriber's news feed **702**.

FIG. **7**A also shows an example wherein the subscriber's "friend" Friend 1 is playing back media in a media playback system that is linked to Friend 1's social-media account. The social-media server **130** has generated a status indicator playback message **707** in Friend 1's social-media account. The playback message **707** is then, by virtue of the subscriber and Friend 1 being "friends", posted in the subscriber's news feed **702**. The playback message **707** indicates that "Friend 1 is listening to Song Name A in the Living Room." Further, the playback message **707** includes an indication of a timestamp **708**, here "Time 1", that may denote the time of day that the media "Song Name A" began playing in the Living Room zone of Friend 1's media playback system (e.g., 11:30 am). Alternatively, the timestamp **707** may indicate how long ago "Song Name A" began playing (e.g., three minutes ago).

In some cases, some or all of the social-media updates to a given social-media account that are based on playback data may be displayed in a separate page or tab of the social-media account. For instance, in an example configuration (not shown) of the social-media account **700**, the news feed **702** might not include the playback messages **707** and **709**. Rather, the news feed **702** may be limited to other types of messages and posts, such as the post **706**. Accordingly, the playback messages may be displayed in a different feed, such as a "What My Friends Are Listening to" feed. Other examples are also possible.

FIG. 7A also shows a playback message **709**, "Friend 3 is listening to Playback Queue B in the Office", that includes an indication of a playback queue as well as a timestamp **710** "Time 3." For instance, the timestamp **710** may indicate the time at which the most recent media item in the playback queue began playback. In some examples, the playback message **709** may be configured such that a "hover over" input, such as a mouse over or a hovering touch input, over the playback message **709** or a portion thereof may provide additional information. As shown in FIG. **7**A, such information may be displayed, for instance, in a pop-up window **711**, based on the position of a hovering mouse cursor **712**. Here, a portion of the playback message **709**, "Playback Queue B", is underlined, indicating that additional information is available. Other indications that additional information is available are also possible, including different colored text and the like.

The additional information in the pop-up window **711** may include an indication of media items in a playback queue that the media playback system **200** is currently playing. In particular, the information may include media items that have already played or have yet to play or both. In the pop-up window **711**, an icon of a speaker next to "Song Name X" indicates that Song Name X is currently being played back in the Office zone of Friend 3's media playback system. Further, "Song Name W" is indicated in italics, which may indicate that Song Name W was previously played back, perhaps just prior to Song Name X. Additionally, pop-up window **711** includes an indication of "Song Name Y" just below the indication of Song Name X, which may indicate that Song Name Y is yet to play in the playback queue, perhaps immediately following Song Name X.

In some examples, the playback message **709** may additionally or alternatively include a selectable link that, when selected, may cause a new window to appear that displays a visualization of the playback queue, which may be a social-media playback queue. Other examples are also possible. Further, it should be understood that the just-discussed information may be displayed independent from any "hover over" or selection input.

Further, minimizing or expanding an additional window to view previously played or yet to be played media might not be limited to playback messages that indicate a playback queue. For example, the playback message **707** shown in FIG. **7**A may be configured such that an input as discussed above may show and/or hide additional information regarding the media being played back by Friend 1's media playback system, if such information is available. An input may provide an indication of one or more media items that were most recently played, or upcoming media that is next to play, among other examples.

As media is played back by the media playback system **200**, the media may change due to a given song ending, or the subscriber manually changing the media, among other reasons. Thus, in some cases, the social-media server **130** may receive second playback data indicating second media that is being played back by the media playback system **200**. Further, the zone in which the second media is played may be different, and therefore the second playback data may include an indication of at least one zone of the media playback system **200** in which the second media is being played back.

Based on the received second data, the social-media server may update the playback message in the social-media account **130**. In some cases, it may be desirable to minimize the number of playback messages that are generated by the social-media server **130**, so as not to cause an excessive number of playback messages in the social-media account based on every change in the played back media. Therefore, the social-media server **130** may replace one or more of the indications of the media, zone, timestamp, etc. in the generated playback message with an updated indication. In this way, the social-media server **130** may continually update the same playback message as new playback data is received.

FIG. **7**B shows another example of the social-media account **700**, here shown at a time shortly after that shown in FIG. **7**A. The status field **703** includes an updated status indicator that includes the updated playback message **713** "Now listening to Song Name E in the Balcony." As shown in the playback message **713**, the indication of the zone may be updated in addition to the indication of the media.

Further, the playback message **707** in the news feed **702** has been updated and is now shown as updated playback message **714**. The indication of the media has been replaced such that the playback message **714** now indicates that "Friend 1 is listening to Song Name D in the Living Room." The indication of the zone in which the media is being played back has not been updated in this example. However, the playback message **714** also includes an updated indication of a timestamp **715**, now indicating "Time 5", which may indicate the time that Song Name D began playing back.

In some cases, subscribers to the social-media network may comment on, reply to, "like", or otherwise respond to a given playback message that is posted in the subscriber's respective news feed. Accordingly, the social-media server **130** may receive responsive data that is responsive to a given playback message. The social-media server **130** may then update the playback message based on the received responsive data. As shown in FIG. **7**B, an additional message **716** has been appended to the playback message **714** indicating "Friend 4 liked Song Name A at Time 4." In this way, responses or "likes" may indicate media that was previously played in Friend 1's media playback system, and the corresponding time when Friend 4 made his or her indication.

FIG. **7**B also shows an updated playback message **717** indicating that Friend 3 is listening to Playback Queue B. Here, neither the indication of the playback queue nor the indication of the zone has been updated. However, the updated playback message **717** includes an updated timestamp **718**, "Time 6", which may again indicate the time at which the most recent media item in the playback queue began playback. Further, a pop-up window **719** may also be updated to reflect the current song in the queue that is now playing, as well as an updated indication of previous and/or forthcoming media items, as discussed above.

In some examples, the updated playback message **717** and/or the pop-up window **719** may also indicate other updated information regarding the playback queue, including changes to the queue. For example, when displayed, the pop-up window **719** may indicate media items that have been added to or removed from the queue. Other possibilities also exist.

b. Second Example Method to Facilitate Social-Media Updates Based on Playback Data

At block **802**, a social-media computing system may receive playback data indicating media that is being played back in a media playback system. As above, the social-media computing system may be a social-media server **130** and the media playback system may be the media playback system **200**, although other examples are also possible. The

media playback system **200** may further be linked to a social-media account, as also discussed above. Further, the playback data may include a variety of information, including one or more of the indications noted above with respect to method **600**. Other examples are also possible.

At block **804**, the social-media server **130** may, based on the received playback data, determine one or more advertisements relevant to the social-media account. The one or more advertisements may be determined based on one or more components of the playback data, such as the profile data of a subscriber whose social-media account is linked to the media playback system **200**, the time of day the media was played back, the zone or zones in which the media was played back, among other possibilities.

For example, the social-media server **130** may receive playback data indicating that media is being played back in a given zone, such as the Kitchen zone, at a given time, such as the early evening. The social-media server **130** may then determine probable topics or activities that may be relevant to that given zone and time combination, such as, in this example, cooking. Accordingly, the social-media server **130** may determine one or more advertisements related to cooking.

As another example, the social-media server **130** may receive playback data indicating that media from a country music genre is being played back in the Balcony zone of the media playback system **200**. The social-media server **130** may then determine one or more advertisements that may be relevant to these indications, such as an advertisement for an outdoor country music concert. Numerous other examples exist for relevant advertisements that may be determined, as well as the playback data on which the determination may be based.

In some cases, the social-media server **130** may determine one or more advertisements based not only on playback data that may be current, but also on previously received playback data, which may include a previous indication of at least one zone of the media playback system **200** in which media was previously played back. For example, the social-media server **130** may store a certain amount of received playback data in memory for use in determining advertisements, such as all playback data received from the media playback system **200** in the preceding year. Alternatively, the playback data may be stored in the media playback system **200** or the media server **120**, either or both of which may provide the information to the social-media server **130**. In any event, when the social-media server **130** determines one or more advertisements based on received playback data, it may do so based also on some or all of the previous playback data, including previous indications of the zone(s) in which media was played back.

For instance, the social-media server **130** may base the determination of advertisements in part on a frequency at which media is played in a given zone over a period of time. The social-media server **130** may further determine correlations between aspects of the previous playback data and information in a subscriber's social-media account, including the subscriber's profile. The social-media server **130** may then based the determination of advertisements in part on the determined correlations. Other examples for how the social-media server **130** may analyze and/or utilize the playback data are also possible.

At block **806**, the social-media server **130** may transmit, to a computing device affiliated with the social-media account, the determined one or more advertisements to facilitate displaying the one or more advertisements on a visual representation of the social-media account. The computing device may be, for example, the computing device **150** shown in FIG. **1** having a web browser capable of displaying a visual representation of the social-media account via a webpage. The computing device **150** may also include a social-media application for displaying a visual representation of the social-media account within the application. Examples of a visual representation of the social-media account **700**, as they may be displayed on the computing device **150**, are shown in FIGS. **7**A-**7**B.

In both methods **600** and **800**, the social-media server **130** receives playback data, at blocks **602** and **802**, respectively, including an indication of at least one zone of the media playback system in which the media is being played back. In some cases, determining the one or more advertisements at block **804** and transmitting the determined one or more advertisements to facilitate their display on the social-media account at **806** may be included as additional blocks in the method **600**, and may occur in addition to the social-media **130** updating social-media data as discussed above at block **604**.

In the example shown in FIG. **7**A, the social-media server **130** has received playback data indicating media that is being played back by the media playback system **200**, and has updated the subscriber's social-media data by generating a playback message **704** in the status field **703** of the social-media account **700**. Further, the social-media server **130** has determined an advertisement **720** relevant to the social-media account **700** based on the playback data, and has transmitted the advertisement **718**, "Advertisement 1", to the computing device **150** for display on the visual representation of the social-media account **700**.

In FIG. **7**B, the social-media server **130** has received second playback data indicating second media that is being played back in a different zone of the media playback system **200**. In addition to generating the updated playback message **709**, the social-media server **130** has determined an advertisement **721** relevant to the second playback data and has transmitted the advertisement **721**, "Advertisement 2", to the computing device **150** for display on the visual representation of the social-media account **700**.

It will be understood by one of ordinary skill in the art that this disclosure includes numerous other embodiments. While some examples described herein may refer to functions performed by given actors such as "users", "subscribers", and/or other entities, it should be understood that this is for purposes of explanation only. The claims should not be interpreted to require action by any such example actor unless explicitly required by the language of the claims themselves.

VI. Conclusion

The description above discloses, among other things, various example systems, methods, apparatus, and articles of manufacture including, among other components, firmware and/or software executed on hardware. It is understood that such examples are merely illustrative and should not be considered as limiting. For example, it is contemplated that any or all of the firmware, hardware, and/or software aspects or components can be embodied exclusively in hardware, exclusively in software, exclusively in firmware, or in any combination of hardware, software, and/or firmware. Accordingly, the examples provided are not the only way(s) to implement such systems, methods, apparatus, and/or articles of manufacture.

As indicated above, examples provided herein are directed to facilitating social-media updates based on play-

back data. In one aspect, a social-media computing system is provided. The social-media computing system includes: i) a processor; ii) a network interface; iii) a non-transitory computer-readable medium; and iv) program instructions stored on the non-transitory computer-readable medium that, when executed by the processor, cause the social-media computing system to: a) receive playback data indicating media that is being played back by a media playback system, where the playback data comprises an indication of at least one zone of the media playback system in which the media is being played back; and b) based on the received playback data, generate a playback message in a social-media account, where the playback message comprises an indication of the at least one zone in which the media is currently being played back.

In another aspect, a social-media computing system is provided. The social-media computing system includes: i) a processor; ii) a network interface; iii) a non-transitory computer-readable medium; and iv) program instructions stored on the non-transitory computer-readable medium that, when executed by the processor, cause the social-media computing system to: a) receive playback data indicating media that is being played back by a media playback system that is linked to a social-media account, where the playback data comprises an indication of at least one zone of the media playback system in which the media is being played back; b) based on the received playback data indicating the media, determine one or more advertisements relevant to the social-media account; and c) transmit, to a computing device affiliated with the social-media account, the one or more advertisements to facilitate displaying the one or more advertisements on a visual representation of the social-media account.

In yet another aspect, a method is provided. The method involves: i) receiving, by a social-media computing system from a media playback system, playback data indicating media that is being played back by the media playback system, where the playback data comprises an indication of at least one zone of the media playback system in which the media is being played back; and 2) based on the received playback data, updating social-media data in a social-media account, where the updated social-media data comprises an indication of the at least one zone in which the media is currently being played back.

Additionally, references herein to "embodiment" means that a particular feature, structure, or characteristic described in connection with the embodiment can be included in at least one example embodiment of an invention. The appearances of this phrase in various places in the specification are not necessarily all referring to the same embodiment, nor are separate or alternative embodiments mutually exclusive of other embodiments. As such, the embodiments described herein, explicitly and implicitly understood by one skilled in the art, can be combined with other embodiments.

The specification is presented largely in terms of illustrative environments, systems, procedures, steps, logic blocks, processing, and other symbolic representations that directly or indirectly resemble the operations of data processing devices coupled to networks. These process descriptions and representations are typically used by those skilled in the art to most effectively convey the substance of their work to others skilled in the art. Numerous specific details are set forth to provide a thorough understanding of the present disclosure. However, it is understood to those skilled in the art that certain embodiments of the present disclosure can be practiced without certain, specific details. In other instances, well known methods, procedures, components, and circuitry have not been described in detail to avoid unnecessarily obscuring aspects of the embodiments. Accordingly, the scope of the present disclosure is defined by the appended claims rather than the forgoing description of embodiments.

When any of the appended claims are read to cover a purely software and/or firmware implementation, at least one of the elements in at least one example is hereby expressly defined to include a tangible, non-transitory medium such as a memory, DVD, CD, Blu-ray, and so on, storing the software and/or firmware.

The invention claimed is:

1. A computing device comprising:

at least one processor;

a graphical display;

non-transitory computer-readable medium; and

program instructions stored on the non-transitory computer-readable medium that are executable by the at least one processor such that the computing device is configured to:

operate as a control device of at least a first playback device of a first media playback system, wherein the first media playback system is configured for operation on a first local area network (LAN);

receive, via a wide area network (WAN), first playback data comprising an indication of first media content being played back by a second playback device of a second media playback system, wherein the second media playback system is configured for operation on a second LAN;

display, via the graphical display, a playback message comprising a selectable indication of the first playback data;

while displaying the playback message comprising the selectable indication of the first playback data, receive, via the WAN, second playback data comprising an indication of second media content being played back by the second playback device of the second media playback system;

based on receiving the second playback data, replace, within the playback message, the selectable indication of the first playback data with a selectable indication to indicate of the second playback data;

while displaying the playback message comprising the selectable indication of the second playback data, detect a selection of the selectable indication of the second playback data, wherein the selection indicates a command to cause at least the first playback device to begin playing back the second media content that is being played back by the second playback device; and

based on the detected selection, cause at least the first playback device to begin playing back the second media content.

2. The computing device of claim **1**, wherein the first playback data further comprises an indication of a room of the second media playback system in which the second playback device is located.

3. The computing device of claim **1**, wherein the second media content being played back by the second playback device comprises an internet radio stream.

4. The computing device of claim **1**, wherein the second playback data comprises an indication of a playback queue that includes the second media content, and wherein the program instructions that are executable by the at least one processor such that the computing device is configured to cause at least the first playback device to begin playing back the second media content comprise program instructions that

are executable by the at least one processor such that the computing device is configured to cause at least the first playback device to begin playing back the playback queue.

5. The computing device of claim **1**, wherein the first media playback system is associated with a first household identifier, and wherein the second media playback system is associated with a second household identifier.

6. The computing device of claim **1**, wherein the program instructions that are executable by the at least one processor such that the computing device is configured to cause at least the first playback device to begin playing back the second media content comprise program instructions that are executable by the at least one processor such that the computing device is configured to cause at least the first playback device to retrieve the second media content from a cloud-based media source.

7. The computing device of claim **1**, wherein the first media playback system is linked to a first social-media account and the second media playback system is linked to a second social-media account, and wherein the program instructions that are executable by the at least one processor such that the computing device is configured to display the selectable indication of the first playback data via the graphical display comprise program instructions that are executable by the at least one processor such that the computing device is configured to display the selectable indication via an application for controlling the first social-media account.

8. The computing device of claim **7**, wherein the program instructions that are executable by the at least one processor such that the computing device is configured to receive the first playback data comprise program instructions that are executable by the at least one processor such that the computing device is configured to receive an indication via the application for controlling the first social-media account that the second social-media account has initiated sharing of the first playback data with the first social-media account.

9. A non-transitory computer-readable medium, wherein the non-transitory computer-readable medium is provisioned with program instructions that are executable by at least one processor such that a computing device is configured to:

operate as a control device of at least a first playback device of a first media playback system, wherein the first media playback system is configured for operation on a first local area network (LAN);

receive, via a wide area network (WAN), first playback data comprising an indication of first media content being played back by a second playback device of a second media playback system, wherein the second media playback system is configured for operation on a second LAN;

display, via the graphical display, a playback message comprising a selectable indication of the first playback data;

while displaying the playback message comprising the selectable indication of the first playback data, receive, via the WAN, second playback data comprising an indication of second media content being played back by the second playback device of the second media playback system;

based on receiving the second playback data, replace, within the playback message, the selectable indication of the first playback data with a selectable indication of the second playback data;

while displaying the playback message comprising the selectable indication of the second playback data, detect a selection of the selectable indication of the second playback data, wherein the selection indicates a command to cause at least the first playback device to begin playing back the second media content that is being played back by the second playback device; and

based on the detected selection, cause at least the first playback device to begin playing back the second media content.

10. The non-transitory computer-readable medium of claim **9**, wherein the first playback data further comprises an indication of a room of the second media playback system in which the second playback device is located.

11. The non-transitory computer-readable medium of claim **9**, wherein the second media content being played back by the second playback device comprises an internet radio stream.

12. The non-transitory computer-readable medium of claim **9**, wherein the second playback data comprises an indication of a playback queue that includes the second media content, and wherein the program instructions that are executable by the at least one processor such that the computing device is configured to cause at least the first playback device to begin playing back the second media content comprise program instructions that are executable by at least one processor such that the computing device is configured to cause at least the first playback device to begin playing back the playback queue.

13. The non-transitory computer-readable medium of claim **9**, wherein the first media playback system is associated with a first household identifier, and wherein the second media playback system is associated with a second household identifier.

14. The non-transitory computer-readable medium of claim **9**, wherein the program instructions that are executable by the at least one processor such that the computing device is configured to cause at least the first playback device to begin playing back the second media content comprise program instructions that are executable by the at least one processor such that the computing device is configured to cause at least the first playback device to retrieve the second media content from a cloud-based media source.

15. The non-transitory computer-readable medium of claim **9**, wherein the first media playback system is linked to a first social-media account and the second media playback system is linked to a second social-media account, and wherein the program instructions that are executable by the at least one processor such that the computing device is configured to display the selectable indication of the first playback data via the graphical display comprise program instructions that are executable by the at least one processor such that the computing device is configured to display the selectable indication via an application for controlling the first social-media account.

16. The non-transitory computer-readable medium of claim **15**, wherein the program instructions that are executable by the at least one processor such that the computing device is configured to receive the first playback data comprise program instructions that are executable by the at least one processor such that the computing device is configured to receive an indication via the application for controlling the first social-media account that the second social-media account has initiated sharing of the first playback data with the first social-media account.

17. A method carried out by a computing device, the method comprising:

operating as a control device of at least a first playback device of a first media playback system, wherein the first media playback system is configured for operation on a first local area network (LAN);

receiving, via a wide area network (WAN), first playback data comprising an indication of first media content being played back by a second playback device of a second media playback system, wherein the second media playback system is configured for operation on a second LAN;

displaying, via the graphical display, a playback message comprising a selectable indication of the first playback data;

while displaying the playback message comprising the selectable indication of the first playback data, receive, via the WAN, second playback data comprising an indication of second media content being played back by the second playback device of the second media playback system;

based on receiving the second playback data, replace, within the playback message, the selectable indication of the first playback data with a selectable indication of the second playback data;

while displaying the playback message comprising the selectable indication of the second playback data, detecting a selection of the selectable indication of the second playback data, wherein the selection indicates a command to cause at least the first playback device to begin playing back the second media content that is being played back by the second playback device; and

based on the detected selection, causing at least the first playback device to begin playing back the second media content.

18. The method of claim **17**, wherein the first playback data further comprises an indication of a room of the second media playback system in which the second playback device is located.

19. The method of claim **17**, wherein the second playback data comprises an indication of a playback queue that includes the second media content, and wherein causing at least the first playback device to begin playing back the second media content comprises causing at least the first playback device to begin playing back the playback queue.

20. The method of claim **17**, wherein causing at least the first playback device to begin playing back the second media content comprises causing at least the first playback device to retrieve the second media content from a cloud-based media source.

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